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1: **Chrna5 cholinergic receptor, nicotinic, alpha polypeptide 5** [*Rattus norvegicus*]

GeneID: 25102 Primary source: [RGD:2347](#)

updated 03-Mar-2006

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## Summary

**Official Symbol:** Chrna5 and **Name:** cholinergic receptor, nicotinic, alpha polypeptide 5 **provided by Rat Genome Database**

See related: [RATMAP:39091](#)

Gene type: protein coding

Gene name: Chrna5

Gene description: cholinergic receptor, nicotinic, alpha polypeptide 5

RefSeq status: Provisional

Organism: *Rattus norvegicus*

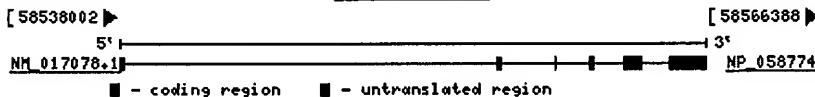
Lineage: Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi; Muroidea; Muridae; Murinae; *Rattus*

Summary: neuronal receptor and ion channel activated by acetylcholine; mediates release of catecholamines into bloodstream [RGD]

## Genomic regions, transcripts, and products

### RefSeq below

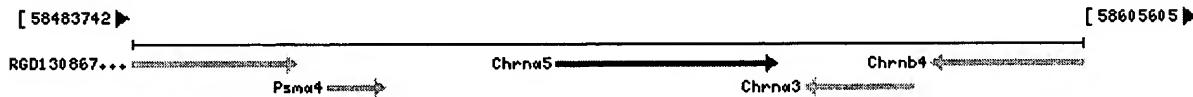
[NC\\_005107.2](#)



## Genomic context

[See Chrna5 in MapViewer](#)

chromosome: 8; Location: 8q24



## Bibliography

Gene References into Function (GeneRIF): [Submit](#)

### PubMed links

### GeneRIFs:

1. Increased expression of the alpha 5 nAChR subunit following spinal nerve [PubMed](#)

ligation contributes to spinal cAMP response element-binding protein phosphorylation and the maintenance of mechanical allodynia.

2. Similar to other nAChR subunits, there is transient expression of alpha5 mRNA during cortical and hippocampal development. [PubMed](#)

3. Increased expression of the alpha 5 nicotinic receptor subunit may contribute to the mechanical hypersensitivity observed following spinal nerve ligation. [PubMed](#)

4. Immunocytochemistry revealed most chromaffin cells positive for alpha5 proteins. [PubMed](#)

## General gene information



### Markers

**Chrna5**(e-PCR) (Links: [UniSTS:261414](#))

Alternate names: J05231; RGD:2347

### GeneOntology

Provided by [RGD](#)

#### Function

	Evidence
<a href="#">GABA-A receptor activity</a>	IEA
<a href="#">acetylcholine receptor activity</a>	IEA
<a href="#">extracellular ligand-gated ion channel activity</a>	IEA
<a href="#">nicotinic acetylcholine-activated cation-selective channel activity</a>	IEA

#### Process

<a href="#">ion transport</a>	IEA
<a href="#">signal transduction</a>	IEA
<a href="#">synaptic transmission</a>	IEA
<a href="#">transport</a>	IEA

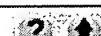
#### Component

<a href="#">integral to membrane</a>	IEA
<a href="#">membrane</a>	IEA
<a href="#">nicotinic acetylcholine-gated receptor-channel complex</a>	IEA

### Homology:

**Human, Mouse**

[Map Viewer](#)



## General protein information

**Names:** cholinergic receptor, nicotinic, alpha polypeptide 5  
acetylcholine receptor alpha 5; Acetylcholine receptor alpha 5

## NCBI Reference Sequences (RefSeq)



**mRNA Sequence** [NM\\_017078](#)

**Source Sequence** [J05231](#)

**Product** [NP\\_058774](#) cholinergic receptor, nicotinic, alpha polypeptide 5

#### Conserved Domains (2) summary

[pfam02932: Neur\\_chan\\_memb; Neurotransmitter-gated ion-channel transmembrane region](#)

Location: 242 - 431 Blast Score: 422

[pfam02931: Neur\\_chan\\_LBD; Neurotransmitter-gated ion-channel ligand binding domain](#)

Location: 32 - 235 Blast Score: 592

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**Related Sequences**

Nucleotide	Protein	Strain
mRNA <a href="#">AY574255</a>	<a href="#">AAS90351</a>	Sprague-Dawley
mRNA <a href="#">J05231</a>	<a href="#">AAA74475</a>	

**Protein Accession Links**  
[P20420](#)      [GenPept](#) [UniProt](#)

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**Additional Links**

[UniGene Rn.40125](#)

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Range: from  to   Reverse complemented strand Features:  SNP  CDD

1: [J05231. Reports Rat neuronal nico...](#) [gi:950093]

Links

[Comment](#) [Features](#) [Sequence](#)

LOCUS RATNACHRR 2895 bp mRNA linear ROD 21-AUG-1995  
 DEFINITION Rat neuronal nicotinic acetylcholine receptor-related protein mRNA, complete cds.  
 ACCESSION J05231  
 VERSION J05231.1 GI:950093  
 KEYWORDS .  
 SOURCE Rattus norvegicus (Norway rat)  
 ORGANISM Rattus norvegicus  
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi; Muroidea; Muridae; Murinae; Rattus.  
 REFERENCE 1 (bases 1 to 2895)  
 AUTHORS Boulter, J., O'Shea-Greenfield, A., Duvoisin, R.M., Connolly, J.G., Wada, E., Jensen, A., Gardner, P.D., Ballivet, M., Deneris, E.S., McKinnon, D., Heinemann, S. and Patrick, J.  
 TITLE Alpha 3, alpha 5, and beta 4: three members of the rat neuronal nicotinic acetylcholine receptor-related gene family form a gene cluster  
 JOURNAL J. Biol. Chem. 265 (8), 4472-4482 (1990)  
 PUBMED [1689727](#)  
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